

## GENERAL SESSION

### COMBINING QUESTIONNAIRE SURVEY AND BIOGEOGRAPHIC MODELS TO UPDATE AND FORECAST THE DISTRIBUTION OF THE ONLY MONGOOSE SPECIES IN EUROPE

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The study of carnivore distribution is challenging, because these species are often hardly detectable. One of these species is the Egyptian mongoose (*Herpestes ichneumon*), the only mongoose currently present in Europe. Since historical times it occurred in south-western Iberia, from where it has spread to the North and East over the past decades. In this study, our main goals were: 1) updating the current distribution area of the species in central Spain (Castilla-La Mancha region), one of the most recent expansion areas, and 2) identifying suitable areas for the mongoose in order to forecast its potential future expansion. Data on mongoose occurrences during 2010-2018 were obtained through an online questionnaire survey with environmental rangers of the regional government of Castilla-La Mancha. We received responses of 309 rangers out of the 467 total number of rangers in the study area (66.2%); >90% of the study area was surveyed. We used logistic regression and the favourability function and a set of environmental variables to model the species current potential distribution and to forecast its potential future distribution. Our results reveal that the Egyptian mongoose is currently present in almost the whole western sector of the region, where the environmental favourability is medium-high. Our findings also suggest that the mongoose expansion could continue to the southeast of the study area, which presents environmental favourable conditions for the species. Our approach, based on the combination of questionnaire survey and biogeographic models, could be also applied to assess the current and expected future distributions of other carnivore species, which could help improve their management and conservation.